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AGENDA

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Director's Colloquium Seminar: September 18, 2014 – Physics Auditorium

08:00 – 8:30	Badging	Badge Office
08:30 – 09:00	Welcome and LANL Overview by John Sarrao (Open To All)	University House
09:00 – 09:45	Cloud Computing from a Science Perspective Round Table * (Open To All)	University House
09:45 – 10:30	Cloud Computing from a Computing Perspective Round Table * (Open To All)	University House
10:30 – 11:15	LANL Globus Network Plans (By Invitation)	University House
11:30 - 12:45	Lunch (By Invitation)	University House
12:45	Transport to Physics	
1:10	Director's Colloquium	Physics Auditorium
2:30 – 3:00	Wrap Up with Jim Ahrens	

Purpose:	**Director's Colloquium**	**Classification Level**	**Unclassified**
Institutional Host(s):	Charles F. McMillan, Director	DIR	
Technical Host(s)	James Ahrens	CCS-7	

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* Round Table Questions

1. What's your take on getting large-scale data (specifically synchronous parallel physics codes) to be able to utilize the public cloud? There isn't enough good reasons to rewrite them just for the public cloud. Is there a tipping point?

2. Our data has traditionally been stored in flat, binary files for performance reasons, since I/O is the slowest thing in a computer. Is there a break point where we might have a legitimate reason to move to databases (either sql or no-sql) for scientific data storage?

3. Are you seeing any scientific codes being written in the languages of the cloud, other than the trivially parallel ones (i.e., DNA sequencing)? We're still a Fortran shop, and new scientific/engineering students coming in still use Matlab & Fortran. I wouldn't count Python/numpy as a cloud language, because it is essentially Matlab. By web languages, I mean java, javascript, c#, f#, clojure, .net/mono, node.js, etc.

4. Is there any convergence on technologies? I think one of the things that mystifies me is that there isn't any one tried and true answer for cloud/web based development. It's very much the Wild West. How much longer before we think it will stabilize, or is the web really something new?

5. Thoughts on replacing calculus with computer programming?

6. Thoughts on Linux containers (aka Docker)?
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7. Thoughts on past efforts in regards to setting up cloud based R&D projects and public datasets such as what NASA has done with NEX? See http://aws.amazon.com/nasa/nex/.

8. We can assume that if the cloud is a useful platform for scalable scientific simulation, it will attract innovative simulations that are conceived 'in the cloud' rather than as simply rewrites of current code that can run in the cloud. Do you see examples of people using the cloud natively to write such new scientific simulations?

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9. In your experience, what's the characteristic that most entices people to write and run simulations in the cloud - price, ease of development, access to resources?

10. I read your blog about using micrometrics as a solution to software invisibility. I really like the idea since most of the software I wrote are essentially invisible. I would like know your idea about how to collect micrometrics for software that plays a more passive role, like libraries. Many of us work on the VTK, do we want each of the filters to collect and send usage data?